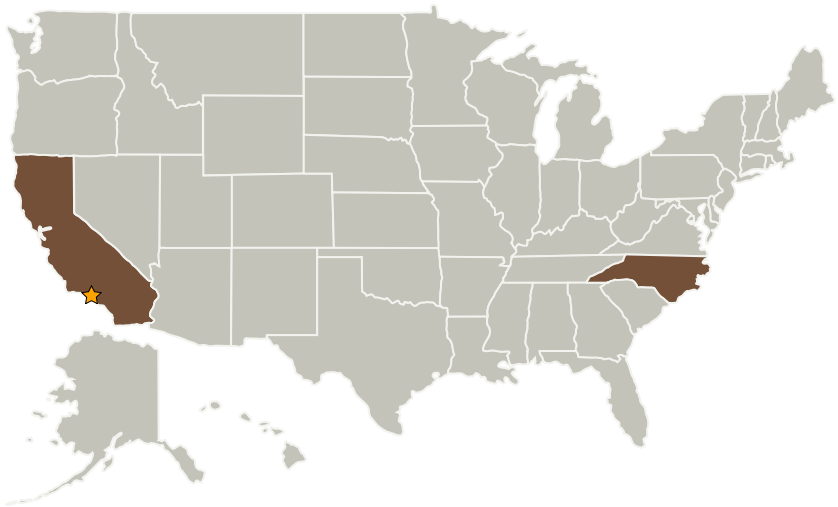
Sensor Array Analyzer for Planetary Exploration, Phase I

Completed Technology Project (2007 - 2007)

Project Introduction

Future planetary exploration missions such as those planned by NASA and other space agencies over the next few decades require advanced chemical and biological marker measurement technologies that will help answer fundamental questions about the composition of the Solar System and the possibility of past and present extraterrestrial life. Electrical/electrochemical array-based systems are highly suited for space and terrestrial applications because of their robustness, high-sensitivity, low-power requirement, inherent miniaturization capability through microfabrication, and diverse transducer mechanisms which permit detection of a broad range of chemical and biological targets. Scribner Associates will leverage its expertise in analytical instrumentation for arrays and impedance spectroscopy to develop an advanced array impedance analyzer for use with existing (e.g., Mars Oxidation Instrument) and future chemical and biological sensor arrays for planetary exploration. The instrument will be versatile: It will be capable of conducting DC and multi-frequency AC impedance measurement of arrays with large numbers of sensing elements. Successful development of the impedance array analyzer will facilitate multiple mission deployments with arrays tailored to specific mission objectives therefore ensuring efficient investment of NASA resources.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Jet Propulsion Laboratory (JPL)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★Jet Propulsion Laboratory(JPL)	Lead Organization	NASA Center	Pasadena, California
Scribner Associates Incorporated	Supporting Organization	Industry	Southern Pines, North Carolina

Primary U.S. Work Locations	
California	North Carolina

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX08 Sensors and Instruments
  - TX08.1 Remote Sensing Instruments/Sensors
    - TX08.1.1 Detectors and Focal Planes